

# CACTUS AND SUCCULENT JOURNAL

Of the Cactus And Succulent Society  
Of America

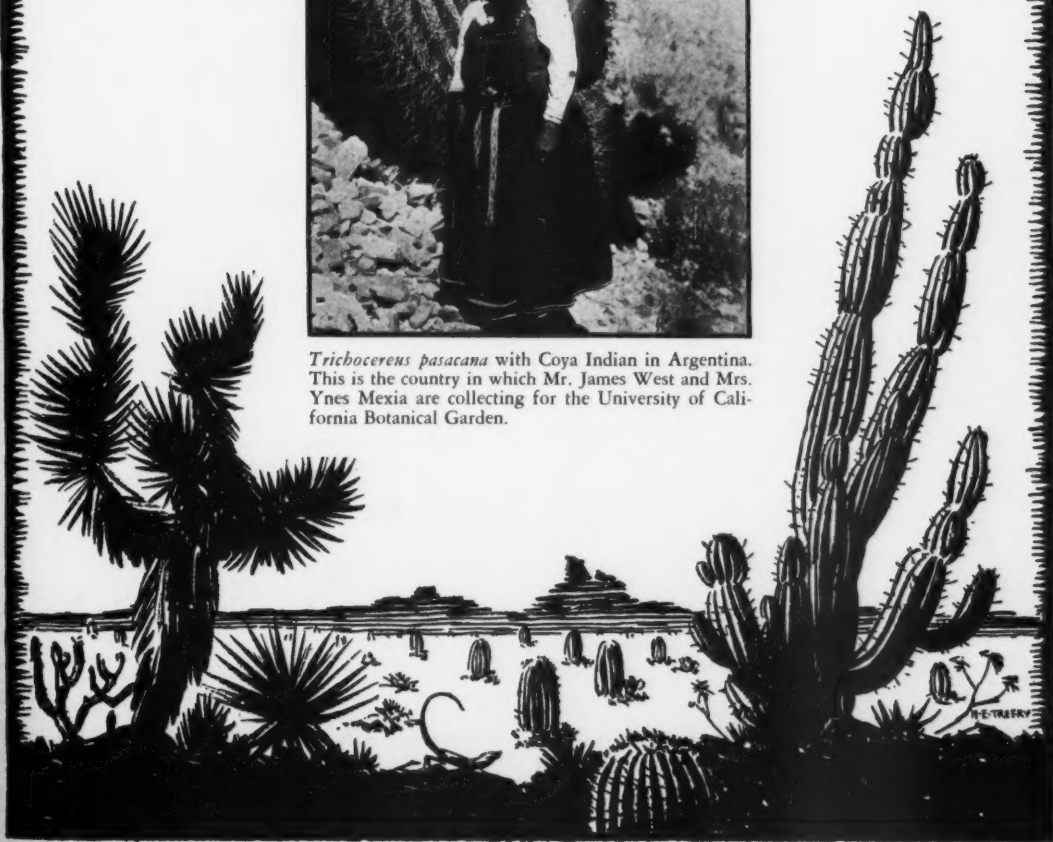
Vol. VII

JUNE, 1936

No. 12



*Trichocereus pasacana* with Coya Indian in Argentina. This is the country in which Mr. James West and Mrs. Ynes Mexia are collecting for the University of California Botanical Garden.



## CACTUS AND SUCCULENT JOURNAL

Published and Owned by The Cactus and Succulent Society of America, Inc., 6162 N. Figueroa St., Los Angeles, California (Mail Address Only). A monthly magazine to promote the Society and devoted to Cacti and Succulents for the dissemination of knowledge and the recording of hitherto unpublished data in order that the culture and study of these particular plants may attain the popularity which is justly theirs. (Membership and subscription \$3.00 per year. Foreign \$3.00 per year by International money order.) Mail application to SCOTT HASELTON, *Editor*, 6162 N. Figueroa St., Los Angeles, Calif. *Editorial Staff*: EDGAR M. BAXTER, CLARENCE L. CLUM, G. A. FRICK, DR. A. D. HOUGHTON, ERIC WALTHER, and JAMES WEST.

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JUNE, 1936

No. 12

Plant Importation by Mail.....	Lee Strong 178
Desert Lilies.....	E. M. Baxter, Howard E. Gates 179
Neobesseyia notesteini.....	Mrs. Neff Bakkers 181
Collecting Succulents in Mexico (Part III).....	Eric Walther 182
Britton and Rose Reprint, Vol. II.....	Center Section
Notes on Oklahoma Cacti.....	Marion Sherwood Lahman 185
Glossary of Succulent Terms.....	Wm. Taylor Marshall 186
West Coast Ferocactus.....	Dr. W. E. Lowry, Sr. 189

UNITED STATES DEPARTMENT OF  
AGRICULTURE

B. E. P. Q.—392

April 13, 1936.

## PLANT IMPORTATIONS BY MAIL

Experience has shown that many packages containing plant material restricted as to entry by foreign plant quarantines are daily being received in the mails without permit authorization for such entry, or in violation of a prohibition against the importation. Obviously, a large proportion of these packages are sent without any knowledge of the quarantine restrictions. At the same time an increasing tendency is noted toward the use of the mails for authorized importations.

A convenient means was established several years ago for the orderly entry under permit of restricted plant material by mail when provision exists for entry by this means. Special mailing tags are provided for the material under permit, and these tags are to be transmitted to the sender. Instructions in four languages for sending the packages accompany the tags. Packages addressed by these tags are routed direct to the inspection station indicated on them and, after the material has passed inspection, are released to go forward to destination without the payment of additional postage.

Packages containing restricted plant material not sent forward in this manner are liable to be returned to the country of origin. However, to accord a more sympathetic treatment toward the addressee who has a package containing material of this character addressed to him, but who has no permit for the entry or whose sender did not follow the instructions and use a special mailing tag, an opportunity will be given the addressee to apply for a permit to import such of the material as

may be enterable by mail. Should the addressee fail to take advantage of this opportunity, disposition will be made of the package in accordance with existing postal, customs, and plant quarantine regulations covering the procedure.

Persons importing seeds of woody perennial plants are cautioned to apply for and receive a permit and mail tags and, in turn, supply the sender with these tags, if they are planning to import such seeds by mail. Field, vegetable, and flower seeds, when free from soil, unless prohibited or restricted entry by special quarantines, do not require a permit for importation. Flower seeds are defined as seeds of annual, biennial, or even perennial flowering plants, which are essentially herbaceous, namely, plants which perish annually down to, and sometimes including, the roots.

LEE A. STRONG,

Chief, Bureau of Entomology and Plant Quarantine.

## IMPORTANT NEWS

The best cactus news that has ever been published in the JOURNAL will appear in the July issue. Be sure not to miss it.

## 8TH ANNUAL CACTUS SHOW

A full report will appear in the July issue with photographs of other shows in all parts of the world.

## JUNE MEETING OF THE CACTUS AND SUCCULENT SOCIETY

Santa Barbara is noted for fine cactus and succulent gardens, so Sunday, June 21st, has been set aside for our annual tour to visit them. Our members and their friends will meet at 10 a. m. at the Orpet Nursery on Hollister Ave. on the western edge of Santa Barbara. The members will bring picnic lunches and our amiable hosts will provide coffee. After lunch at the nursery a schedule of garden visits will be announced.



Courtesy Richfield Oil Co. of Cal.

*Hesperoyucca whipplei*

## DESERT LILIES

By E. M. BAXTER and HOWARD E. GATES

A tough, fibrous, sword-like leaf three feet long, and a wood covered pithfiber filled trunk varying from a few inches to two feet in diameter are not generally associated with lilies. However, with all of the unusual things found on the desert, we need not be surprised in find-

ing that our yuccas, *Clistoyucca*, *Yucca*, and *Hesperoyucca*, actually are lilies.

True, there are lilies, as we commonly know them, on the desert. Under discussion here are the most unusual of the type described in the opening paragraph. Three distinct genera of

yuccas are found within our borders and a related genus, *Nolina*, also has one or two species in California.

*Clistoyucca* is the famed Joshua Tree, almost as widely known from postcard and desert view use as the Arizona Giant Cactus, *Carnegiea gigantea*. Its grotesque branches are not to be confused with any other living plant. There is only one species of the genus, the name *arborescens* has fourteen years priority over *brevifolia*, but both are used quite commonly. It is found in California, Utah, Nevada, and Arizona.

*Hesperoyucca* is another genus with only one species, and that one is limited to southwestern California. Unlike most yuccas it dies when it has flowered. A cespitose form that grows in the mountains loses only the flowering head, the remainder of the plant continues to grow and form new heads. Many specimens have dozens of growing points, but seldom mature more than one a year. Flowers on this cespitose, or multiple, yucca are smaller than on the giant single plants that may throw up a flowering stalk more than twelve feet high. A valley full of this latter form is shown in the colored picture accompanying this article. Purple, yellowish, or reddish flowers are merely races of the one species, *Hesperoyucca whipplei*.

Widespread over the Southwest, but little known, is a low-growing yucca that has much

to offer in its enormous, lily-like flowers and beautiful blue-green leaves. *Yucca baccata* is one of California's Soap-roots (called this by desert dwellers on account of the saponifying of their roots) that grows in a limited range in the higher elevations eastward from Cima; then through the southern tip of Nevada and northern Arizona and New Mexico to southern Colorado and Texas. In California it is found above the four thousand foot level in company with the Joshua tree (*Clistoyucca arborescens*) and western Juniper.

Individual specimens of the blue yucca have a very short caudex, or trunk, which branches instead of growing upright, and so forms a mass of trunkless heads in place of the upright plant that is found in *Yucca mohavensis*. Each head bears a mass of upright, stiff, hairy-margined, blue-green leaves that rise to about three feet in height.

Cattle grazing there seem to enjoy chewing on the leaves of the yucca, but do not destroy the plants. The large fruit of this species, probably twice the size of any related species, are eaten raw or cooked. The eight-inch long fruit resemble, in general appearance, a fat carrot; they are largest at the upper, or stem, end and taper to a rather blunt point. The seeds are roundish, flat, and packed in six vertical compartments in the fruit, like coins in stacks.

Flowers hang gracefully from rather heavy



Three yuccas together. To the left is a typical cluster of *Yucca baccata*; hugging the ground; on the right, a stand of the taller growing *Yucca mohavensis* that may have a trunk several feet tall; and across the canyon, faintly seen, are fifteen foot specimens of *Clistoyucca arborescens* or Joshua Tree. Within a hundred feet of this spot were found a *Coryphantha*, an *Echinocereus*, six *Opuntia*, an *Agave* and two ferns. Photograph by Baxter.



Flowering specimen of the blue yucca, *Yucca baccata*, in eastern California. Flowers are a creamy white with large greenish outer segments. Plants do not flower regularly, but do not die after flowering as do those of some yuccas and agaves. Photo by Howard E. Gates.

stems, these in turn from pith-filled stalks rising from the center of the leaves. The individual flowers are lily-like, the only characteristic of the plant that would apparently relate it to the Lily family, where it actually belongs.

South of the Los Angeles-Las Vegas highway near the California-Nevada state line is a 4000 foot high, wide, flat valley through which winds a desert road leading to Cima, and eventually Goffs. Here may be seen three yuccas growing together: *Yucca baccata*; the green-leaved, tall growing *Yucca mojavnensis*; and *Clistoyucca arborescens*, the Joshua Tree. Closely associated with the blue yucca is *Opuntia chlorotica* with its blue-green joints and bright yellow spines, and *Echinocereus mojavnensis*, red-flowered Mojave hedgehog cactus.

Plants may not be removed, according to law,

and would probably not survive in lower, warmer sections if they were. Growing at an altitude of 4000 to probably 5500 feet they withstand severe cold and snow. Plants have excellent drainage for their roots, a conditions that must be duplicated for plants grown from seed.

#### NEOBESSEYA NOTESTEINI

Concerning what my collector near Deer Lodge, Montana, calls "That elusive little Cactus" there has been much diversity of opinion and statement as to the color of its flower. The cause of this is now evident to me. I have plants in bloom at my nursery. Of the twelve plants in bloom three are grayish pink with deep pink centers and pink anthers; one is greenish with green anthers; four are pale yellow and four are tan. The midribs of the petals are much darker than the margins except in the pink flowered ones; there the petals are much the same color throughout.

No doubt, the botanists, who have studied them, have had one or at most two or three to study which would give them no clue as to the range of color. They grow in that small area of the world only where the temperature goes to -40 degrees F. in a little corner of a sparsely settled state from which material has been difficult to obtain.

Last year at my booth at the California Pacific International Exposition I talked to a great many people from a great many states. In fact, when the Exposition was over, I had shipped to every state in the Union except three.

When I discovered that anyone came from Montana I quickly put the question: "Do you live near Deer Lodge?" At last I got a real thrill by discovering one who did, none less than a cousin of Joyce Kelmer, author of "Trees." She promised to send me some plants and she did—six. They were in fruit, but until they were in flower one could not be sure of their identity. This spring we obtained fifty plants. The rarest cactus in the Amateur Division at the Eighth Annual Cactus Show in Los Angeles was exhibited by Mr. Ervin Strong, who had one of the original six plants received last year.

MRS. NEFF BAKKERS,  
Knickerbocker Nursery, San Diego.

#### NEW LISTS

Robert Blossfeld, Potsdam, Germany. Illustrated catalogues of Cacti and the other Succulents and Seeds. Covers in color. Many wonderfully printed illustrations. Parts I, II and III at 30 cents each.

The Glen Rockeries, Great Brak River, Cape Province of South Africa. Four page free seed list containing many rare items.



## Collecting Succulents in Mexico

By ERIC WALTHER

### PART III.

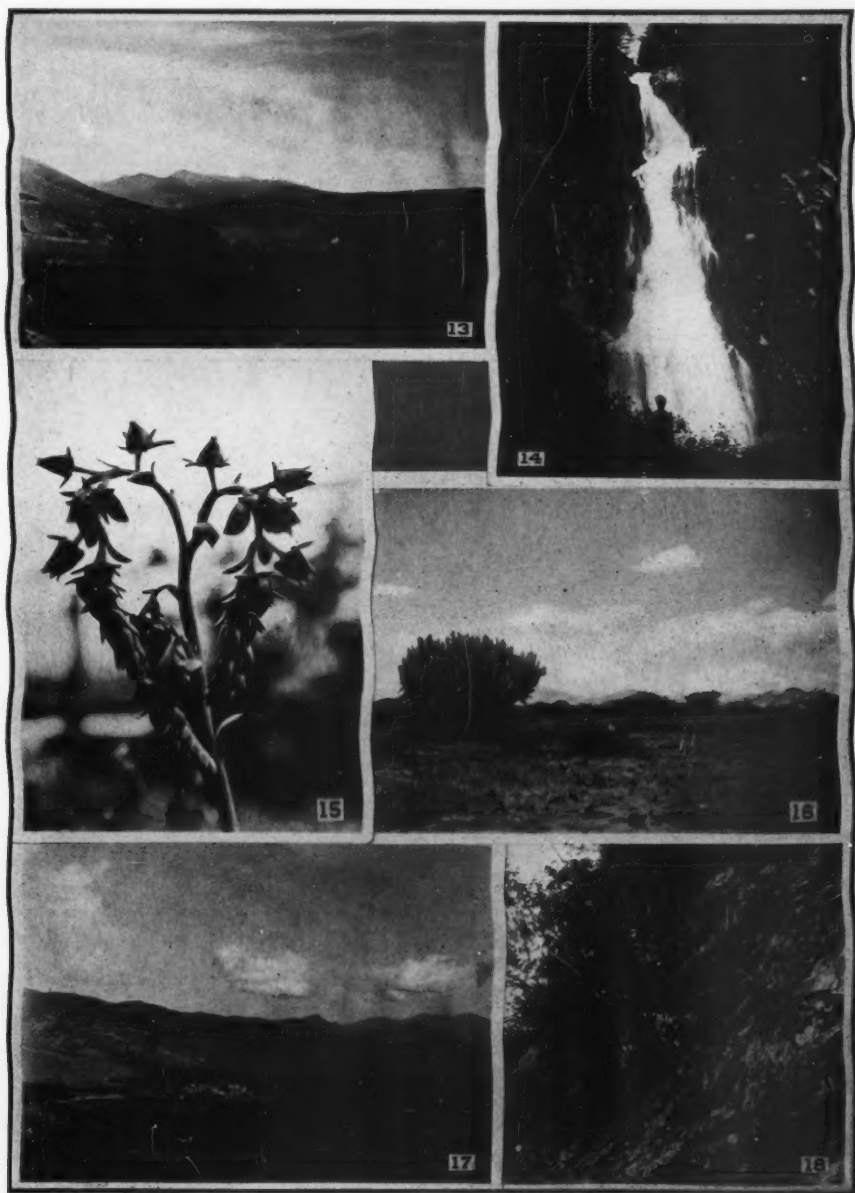
In further pursuit of the same problem, an earlier excursion had been undertaken to Tenancingo, located on the same general range of Mountains west of Toluca. Here we had found the previous season, *Echeveria toluensis*, *byrnesii*, *grandifolia* and *subrigida*, all to the North and East of the "Nevado de Toluca."

To the Southwest of this extinct volcano, Tenancingo nestles in the foothills, at considerably lower elevation than the chill plain of Toluca, in a climate mild enough for Avocado's, etc. Our photo No. 13 shows its location clearly. One of its scenic attractions is the "Cascada de Sta. Ana," (see photo No. 14), where we proceeded after lunch under the guidance of the juvenile boot-black of our hotel. At the very brink of the falls, hidden in the densely luxuriant grass-mat continually soaked in the mist-spray of the falling waters, there grew another *Echeveria*; being in full flower, its identity with *E. fulgens* was clearly evident. While we were busy photographing the scene, our agile guide soon gathered the few plants we needed, but difficulty was experienced in finding any that were not infested with the larva of *Mitoura spinetorum*, a leafmining moth that is probably the most serious enemy of *Echeveria* in its native home. The surrounding woods were full of fascinating trees, flowering plants, etc., but lowering clouds threatened rain so that an early return was advisable. Unexpectedly, the return of our tired explorers was facilitated by their falling in with an itinerant circus, its owner knew Los Angeles well enough to have had a daughter born there.

After a wash-up and dinner, the very full day, beginning that same morning in the heart of Mexico City, was rounded out by an exploration of the little town, its highlight being the discovery, in the yard of the Parochial Church, of our *Echeveria* of the day, in full flower around the central flowerbeds; (see our photo No. 15). Next day, turning out a complete blank as concerns *Echeveria* or other succulents, we shall skip it here, and pass on to the next trip undertaken after our return to Mexico City.

This took us north into the State of Hidalgo, and was most instructive in showing the great differences both in climatic conditions and resultant plant-associations capable of existing within very short distances of each other.

Starting early Sunday morning from Mexico City by mailcoach, with Sr. Rudorff as companion, guide and interpreter, our first stage brought us to Ixmiquilpan, probably familiar as a name to most Cactus-fanciers in consequence of the collections made near here by Dr. Rose. By reason of its lower elevation and surrounding mountains, this country is real desert where cacti abound, as *Myrtillocactus*, *Pachycereus*, *Echinocactus*, etc. (see photo No. 16). Succulents were scarcer, and we were unable to find even a trace of *Echeveria bifurcata*, supposedly native here. An afternoon's search yielded only *Sedum pachyphyllum*, so that by evening we decided to continue on to Zimapan. Famous for its still active silver-mines and smelter, Zimapan is surrounded by rather barren-looking hills, looking to be much closer to the town than they really are. Early in the morning we attempted to locate a guide among the loafers in the Plaza, by showing them some of our *Echeveria*-pictures, and were told by one looking a bit more intelligent that he knew where some such plants grew. On trying to engage him as guide he was willing, providing his "Patron" would grant him permission. When his "Patron" materialized, he turned out to be the "Presidente Municipal," Sr. Rojas, who combined in his various functions also that of sheriff and jailer. For our prospective guide was "in jail," awaiting trial for attempted murder. However, we found him to be most mild-mannered and very anxious to please, and his home at the foot of the "Cerro de Tathi" was our first halt of that day's hike. Shortly after we found the first succulent of the day, a *Villadia*, probably *V. stricta* Rose. The vegetation here was very interesting, strongly xerophytic in nature, and abounded in spiny plants, as *Acacia*, *Hechtia*, *Agave stricta*, *Yucca*, *Nolina*, *Echinocactus*, *Mammillaria*, *Opuntia*, etc., compelling strict attention to ones path and leaving little time for sightseeing. Here is also the home of the Mexican Bush-poppy, *Hunnemannia fumariaefolia*, well-known in California gardens. After a long, laborious ascend we finally arrived at the upper cliffs where our succulents were said to grow. These turned out to be *Pachyphytum brevifolium*, readily recognized, even though not in flower, by its characteristic, sticky stems. With it occurred *Sedum pachyphyllum* and *Sedum moranense*. After a brief rest, plants and photo's were obtained and we



13. Tenancingo nestling at foot of Nevado de Toluca. 14. Cascada de Sta. Ana., with bootblack-guide. 15. Flowering branch of *E. fulgens*, taken in the field. 16. Cactus country near Ixmiquilpan, with *Myrtillocactus*. 17. Zimapan as seen from the Cerro de Tathi. 18. *Pachyphytum brevifolium* Rose, as growing wild on the Cerro de Tathi.

started back, through rather oppressive heat so that we were thankful that the going was now downhill. On arrival in Zimapan our first concern was the placing of some bottles of beer into the sole icebox of the town, to avoid repetition of our experience on the previous night, when the beer was warmer than the soup. From our frequent mention of beer no false impressions should be drawn; it is difficult, if not impossible, to find safe drinking water in Mexico outside of the Capital itself, but bottled beer is both safe, good and fairly cheap.

To the west of Zimapan lies the Barranca of the Rio Moctezuma, which is the home of *Echinocactus grusoni*, and we had planned to try and see this in its native home. However, during a conversation with the genial and courteous Sr. Rojas, he stated that a short distance to the north, not far from the Main-highway, there grew an *Echeveria* in numbers, perhaps the one we sought, so that next day we planned to visit this locality.

#### NEW CATALOGUE IN COLOR

The first Cactus and Succulent Catalogue in Color has been issued by Johnson Cactus Gardens (Subsidiary Johnson Water Gardens) Hynes, Calif. 16 pages 8x11 with 34 illustration in color. Harry Johnson, as usual, is the first to introduce color to display his ever growing stock of cacti and succulents. The common names will be of especial interest to those who are starting collections.

#### EDITORIAL

It is interesting to note that Texas leads all states except California in the number of Society Members. There is an ever increasing demand for articles from the Cactus State and it is hoped that readers in Texas will send in articles and pictures. Our members will be especially interested in habitat pictures. The next issue of the JOURNAL will continue "What Grows Where" and this will take in the Texan plants.

New York and New Jersey follow Texas in cactus interest and there has been a rapidly increasing interest from the middle west and up into Washington. The JOURNAL has even found its way into Alaska.

Before the year is over the JOURNAL will have some interesting announcements to make regarding its work and its acceptance of the many new and changing species.

The photograph contest is not bringing the response expected and it is therefore repeated in this issue. Many of the pictures will be used in the illustrated issues during the summer and the prize winners will be announced in the fall. The following have entered the contest to date:

C. W. Armstrong, Canada.  
Herbert J. Solomon, Australia.  
F. Schmoll, Mexico.  
McCabe Cactus Gardens, Calif.  
Mrs. G. L. Craig, Calif.  
E. L. Dearing, Tenn.  
H. O. Bullard, New Jersey.

Kaksen En Nursery, Japan.  
Clarence L. Schmutzler, Wis.  
Fred Chesham, England.  
Mrs. William J. Flickinger, Mich.  
F. E. Cooper, England.  
Ralph W. Field, Australia.  
Frank J. McCoy, Calif.  
W. A. Pirtle, Texas.  
Ina Campbell, Calif.  
Oklahoma Cactus Society, Okla.  
H. Wm. Menke, Calif.  
M. W. Morgan, Calif.  
J. P. McKean, Calif.  
B. R. Lewis, Minn.  
Robert Manda, New Jersey.  
Mrs. Harry T. Johnson, Okla.  
H. M. Wegener, Calif.  
A. G. Settle, Calif.

#### SEND IN YOUR PHOTOGRAPHS NOW

Only clear sharply focused prints can be used. No photos will be returned. All photos will be acknowledged in the Journal. Prize winners will be announced 6 months from date. Any photo may be published in the Journal by giving proper credit. In each classification the first prize will be a copy of "Cactus" by van Laren.

1. Window Gardens and arrangements.
2. Year-around plantings (as in California and Texas).
3. Summer gardens (for the East and Middle West where plants are kept indoors in the winter).
4. From foreign lands.
5. Best picture of a Cactus flower.
6. Best picture of a Succulent flower.
7. Novelties in plants, pots, arrangements.
8. Cactus Shows and Displays.

Address: Cactus Journal, 6162 N. Figueroa St., Los Angeles, Calif.

It was suggested that I write and ask you if you have any idea where I could obtain a specimen of *Opuntia chaffeyi*, mentioned in the April, 1932, number of the "CACTUS AND SUCCULENT JOURNAL" on page 45.

I am a daughter of Elwood Chaffy, the discoverer of this *Opuntia*, and would very much like to obtain a small plant. At the time my father found this *Opuntia* we were living in Mexico, but about 10 years ago, (five years after my father's death) we left Mexico and came to this address, and I am anxious to replace the specimen which I was obliged to leave when we moved. Any help that you could give me would be gratefully received.

OLGA ELSWOOD-CHAFFY  
915 N. Sultana Ave., Ontario, Calif.

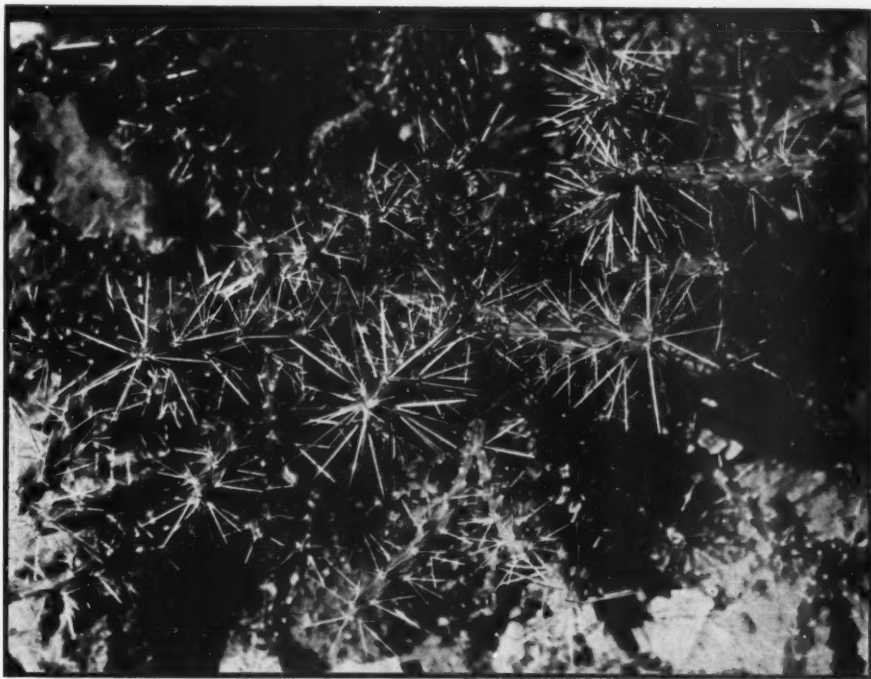
May I take this opportunity to thank the Editors for their efforts in making the JOURNAL so interesting and instructive.

ARTHUR H. HOLSTE, N. Y.

THE CACTACEAE, Vol. 1, as reprinted in one color in the Journal. An exact reprint of Carnegie Institute's contribution to cactus literature. Bound in heavy buckram .....\$10.00

The following 8 pages are from Vol. II "The Cactaceae." Courtesy Carnegie Institute.





*Opuntia whipplei* which is called the "Small Biting Cactus." Photo by James Slack

## Notes on Oklahoma Cacti

By MARION SHERWOOD LAHMAN

We called it snake cactus at first because its long, slim stems looked so much like little green snakes, lying flat on the sun-baked clay under a stand of sagebrush. The fact that it was found in the shade, led to its being planted in the shade in my garden. This was a mistake, it was learned later. No description in any of the books fitted it. Perhaps when it bloomed, the flower would help identify it.

So there ensued a period of watchful waiting for the flower that never came. At the end of two years the original single slip had grown to a trailing plant of several branching stems gray-green, less than half an inch thick, six to ten inches long, ridged with faint tubercles, spines few and delicate. It must be something new. Experiments were begun in an attempt to find out. One cutting was planted in full sunlight; another in partial shade, others in different soils, with varying water supply.

Sunlight and water, especially sunlight, was what those cuttings wanted. With surprising celerity they lifted their heads, increased in size and showed their true colors. That one given full sunlight and a fair amount of water thrived especially. It became a foot-high tangle of many branches, with stems twice as thick as before, set with a formidable array of long, stout, white-sheathed spines. The puzzle was solved. *Opuntia whipplei*! the Small Biting Cactus of the Navajos.

But what was it doing in Harmon County, Oklahoma? Did not the printed page state explicitly that *O. whipplei* was the western form to be looked for in Arizona and western New Mexico? *O. davisii* is the kind native in eastern New Mexico and western Texas. It differs in having shorter, stouter stems, more numerous spines and golden-brown sheaths, particular emphasis being laid on the color of the sheaths.

One can find *O. davisii* in that part of Oklahoma bordering on the Panhandle of Texas where the soil is the same clay and gypsum. And the small biting cactus is there too, if silvery sheaths and slender, longer stems have any significance.

Navajo Indians with their leaning toward descriptive names, have referred to a delusion that the joints of *O. whipplei* jump at and bite unwary passersby; indeed, a person stabbed by the needle-sharp, barbed spines, might well think he had been bitten by a rattle-snake. Those spines will go through shoe leather. The least touch is enough to give them a firm hold in flesh and it

takes a heroic jerk to pull them loose. The jerk brings away a joint, which is what *O. whipplei* wants; for this fierce little cactus finds it easier to start new plants in new places by parting with some of its many joints than to go through the proper flower, fruit and seedling routine.

*O. davisii* has no common name yet except the unprintable objurgation of the plainsmen to whom it is a serious menace. Its spines are even more vicious than those of *O. whipplei*. Cattle and wild animals give it a wide berth; even then they are jabbed unawares and suffer from spines they cannot remove.

## Glossary of Succulent Terms

A glossary of botanical terms and pronouncing vocabulary of generic and specific names used in connection with xerophytic plants.

By WM. TAYLOR MARSHALL

Drawing by Georgia Banks and Margaret Kincher

### PART III

**antheridium:** (ăn-thēr-id'-i-ŭm) the male organ in ferns and mosses, corresponding to the anther of flowering plants.

**antheriferous:** (ăn-thēr-ĭf'-ēr-ŭs) bearing or having anthers.

**anthesis:** (ăn-thē'-sis) the period or action, when the flower expands, and the pollen is ripe and the stigma receptive.

**anthocarpus:** (ăn-thō'-car'-pŭs) said of a plant in which the flowers and fruit are combined, as in the pineapple.

**anthodium:** (ăn-thō'dĭ-ŭm) flower head of the family Compositae, called a flower in error.

**antiquorum:** (ăn-tĭ-kwō'-rŭm) of the ancients. S.

**antrorsely:** (ăn-trors'-lĭ) directed forward or upward.

**apertus:** (ă-pĕrt'-ŭs) uncovered; bare. S.

**apex:** (ă'-pĕx) the growing point of a stem or root.

**aphylla:** (ă-fil'-ă) leafless. S.

**apiculate:** (ă-pĭk'-ŭ-lăt) ending in a short, sharp, abrupt, rather soft tip, said of leaves etc. that have the midrib prolonged.

**apiciflorus:** (ă-pēs'ĭ-flōr'-ŭs) flowering at the summit of the plant. S.

**Apicra** (ă-pĭ-kră) a genus of succulent plants in the family Liliaceae. G.

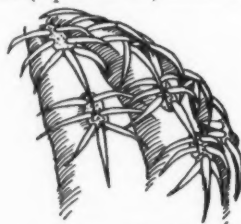
**apiculatus:** (ă-pik'-ŭ-lă-tŭs) ending in a point. S.

**apilary:** (ă-pĭ'-lă-rē) without a hat, or cover. S.

**Aporocactus:** (ă-pōr'ō-kăk'-tŭs) impenetrable cactus; a genus of Cacti with air roots in the tribe Hylocereanae.

**apotycaantha:** (ă-pō'-tĭ-kăn'-thă) with an abnormal spine. S.

**applanatus:** (ă-plăn-ăt'-ŭs) flattened. S.



Appressed spines

**appressed:** (ă-prĕst) laying flat against another organ or part; not spreading.

**approximate:** (ă-prōk'-sĭ-măt) situated close together, but not united.

**appropinquatus:** (ăp'-prō-pĭn'-kwăt-ŭs) of the relationship. S.

**apricus:** (ă'-prĕ-kŭs) basking in the sun. S.

**aquosa:** (ă-kwō'-să) watery. S.

**arachnoid:** (ă-răk'-noĭd) beset with cobwebby hairs. S.

**araneifer:** (ă-răn'-ĕ-ĭf'-ĕr) cobweb like. S.

**arboreus:** (ăr-bō'-rē-ŭs) tree-like. S.

**arborescens:** (ăr-bō-rēs'-ĕns) a tree-like species. S.

**arborescent:** (är'-bō-rēs-ěnt) having a size or form that is tree-like.

**arbusculus:** (är-būs'-kū-lūs) shrub-like. S.

**archegonium:** (är'-kē-gō'-nī-ūm) the female organs of mosses, ferns, etc.

**arcuate:** (är'-kū-āt) bow-shaped. S.

**arcuatus:** (är'-kū-ā'-tūs) bent like a bow. S.

**arenaria:** (ä-rē'-nā-rī-ä) from a sandy place. S.

**arenarius:** (ä-rē'-nā-rī-ūs) of sand or sandy places. S.

**arenicola:** (ä-rē'-nī-kō'-lā) living in sandy places. S.

**areolatus:** (ä-rē'-ō-lā'-tūs) having areoles. S.



*Areole with spines*

**areole:** (ä'-rē-ōl) a small open space, specifically: in leaves—a space between the veins; in cacti—the restricted areas where the spines or flowers or both are borne.

**Arequipa** (ä-rē-kēp-ä) a genus of cacti at present monotypic; named in honor of the City of Arequipa, Peru.

**argentatus:** (är'-jēn-tā'-tūs) silvery; silvered. S.

**argentinus:** (är'-jēn-tē'-nūs) from Argentine Republic. S.

**argentius:** (är'-jēn-tē'ūs) silvery. S.

**argophyllus:** (är-gō-fil'-ūs) silvery leaved. S.

**argutus:** (är-gū'-tūs) sharp-toothed. S.

**Argyroderma:** (är'-gī-rō-dēr'-mä) literally "silver skin;" a genus of the Mesembrianthema group of the family Aizoaceae.

**aridus:** (är'-īd-ūs) arid; dry. S.

**aril:** (är'-il) an exterior covering or appendage of certain seeds, developing as an outgrowth from the funicle.

**Ariocarpus:** (är'-ē'-ō-kār'-pūs) with an aria like fruit; a genus of cacti.

**aristate:** (ä-rīs'-tāt) provided with an awn or bristle-like appendages, especially on the floral bracts—as the "beards" of wheat and as on the leaves of Aloe aristata. S.

**Armatocereus:** (är-māt'-ō-sē'-rē-ūs) a genus of cacti of which Cereus cartwrightianus is the type.

**armatus:** (är-māt'-ūs) armed. S.

**aromaticus:** (är-ō-mā'-tī-kūs) aromatic; fragrant. S.

**arrigens:** (är'-rī-gěns) erect. S.

**Arrojadoa:** (är-rō'-hā-dō-ä) a genus of cactus honoring Dr. Miguel Arrojadoa Lisboa of Brazil.

**Arthrocerus:** (är'-thrō-sē'-rē-ūs) "jointed Cereus;" a genus of cacti related to Trichocereus of which Cereus microsphaericus is the type.

**articulate:** (är-tik'-ū-lāt) jointed; having a node or joint.

**arundinaceous:** (ä-rūn'-dī-nā'-shūs) reed like.

**ascending:** (ä-sēnd'-īng) upcurved; growing or directed upward.

**asciiform:** (äs-sē'-ī-fōrm) hatchet shaped.

**Asclepiadaceae:** (äs-klē'-pī-ä-dā'-sē-ē) a botanical family of the Order Gentinales which includes the Stapelias, etc.

**asexual:** (ä-sēk-shū-äl) without sex; a grass that propagated by root stocks is asexual.

**aspera:** (äs'-pēr-ä) rough with hairs; plush-like. S.

**asperatus:** (äs'-pēr-ä'-tūs) rough. S.

**aspericaulis:** (äs'-pēr-ī-kāw'-līs) rough stemmed. S.

**asselliformis:** (äs-sēl'-ī-fōrm'-is) shaped like a wood louse. S.

**assimilation:** (ä-sīm-ī-lā'-shūn) see metabolism.

**assurgens:** (äs-sūrj'-ěns) ascending. S.

**asterias:** (äs-tē'-rī-ūs) star shaped. S.

**Astrophytum:** (äs'-trō-fi-tūm) "star plant;" a genus of cacti.

**asymmetrical:** (äs-ī-mēt'-rī-kāl) irregular in shape; not symmetrical.

**atratus:** (ä-trāt'-ūs) garbed in black. S.

**atricolor:** (ä-trī'-kūl-ör) jet black. S.

**atropurpureus:** (ät'-rō-pūr-pūr'-ē-ūs) dark purple. S.

**atrorubens:** (ät'-rō-roo-běns) dark red. S.

**atrosanguineus:** (ät-rō-sān-gwīn'-ē-ūs) dark blood color. S.

**atrovirens:** (ät-rō-vīr'-ěns) dark green. S.

**attenuate:** (ä-tēn'-ū-āt) long or slender tapering becoming slender or very narrow.

**augsticostatus:** (ō'-gūs-tī-kōs'-tā-tūs) with notable ribs. S.

**augustissimus:** (ō'-gūs-tīs'-ī-mūs) majestic. S.

**auratus:** (ō-rāt'-ūs) metallic yellow. S.

**aureus:** (ō'-rē-ūs) golden. S.

**aurantiacus:** (ō-rān'-tī-ā-kūs) orange colored. S.



*Auricled leaf*

**auricled:** (ō'-rī-kld) having auricles or small earlike appendages.

**auricomus:** (ō-rī-kōm'-ūs) with golden hair. S.

**aurivillus:** (ō-rē-vīl'-ūs) with golden hair. S.

**australis:** (ōs-trāl'-ūs) southern; from the south. S.

**Austrocactus:** (ōs'-trō-kāk'-tūs) a genus of cacti from Patagonia.

**Austro-Echinocactae:** (ōs'-trō-ēk'-īn-ō-kāk'-tē-ē) Subtribe seven; subfamily three of the Cactaceae in Backeberg's classification.

**autumnale:** (ō-tūm'-nāl'-ē) flowering in the autumn. S.

**avismontana:** (ā'-vīs-mōn-tān'-ā) mountain bird. S.

**Avonia:** (ā-vōn'-i-ā) a section of the genus *Anacampteros*.

**awl-shaped:** (ōl-shāpt) subulate; gradually tapering down from the base to a narrow; stiff point.



*Awns on wheat*

**awn:** (ōn) a bristle like appendage, especially on the floral bracts.

**axil:** (āk'-sīl) the upper angle formed between the stem or branch and any other branch, leaf, tubercle or other organ arising from them.

**axillary:** (āk-sīl-lā-rī) situated in, rising from, or pertaining to an axil.

**axis:** (āk-sīs) the stem on which organs are arranged.

**Aztekium:** (ās-tēk'-ī-ūm) a genus of cacti named to honor the Aztek race.

**azureus:** (āzh-ūr'-ē-ūs) sky blue. S.



*Stem growing from a leaf axil*

## B

**baccate:** (bāk'-āt) berry like.

**badius:** (bād'-ē-ūs) dark reddish brown, chestnut brown. S.

**ballistic or balistic:** (bā-līs'-tīk) fruits which discharge their seeds elastically.

**balsamifera:** (bōl'-sā-mīf'-ēr-ā) producing an aromatic substance by incision or flowing spontaneously. S.

**bambusoides:** (bām-būs'-oī-dēs) resembling bamboo. S.

**banded:** (bānd'-ēd) marked with stripes of color.

**barb:** (bārb) hooked hairs; frequently double hooked.

**barbate:** (bār-bāt') bearded.

**barbatus:** (bār-bāt'-ūs) specific name for a bearded plant. S.

**barbellate:** (bār-bēl'-āt) minutely bearded with stiff hairs.

**barrel-cactus:** common name denoting several species of *Echinocactus* or *Ferocactus*; equivalent to the Spanish "visnaga."

**Bartschella:** (bārt-chēl'-ā) a genus of cacti named in honor of Dr. Paul Bartsch, curator of the U. S. National Herbarium.

**basal:** (bā'-sāl) at the base of an organ.

**basifixed:** (bā'-sī-fixt) attached by the base.

**basilaris:** (bās-ī-lā'-rīs) pertaining to, or rising from, the base. S.

**Beaucarnea:** (bō-kār'-nē-ā) a genus of plants in the *Amayllidaceae* related to the *Agaves*.

**beak:** (bēk) a pointed projection.

**bella:** (ēl'-ā) beautiful. S.

## West Coast Ferocacti

By DR. W. E. LOWRY, SR.

In the course of a recent trip through the Mexican State of Sonora I became much interested in two species of large *Ferocactus* with which I had not previously come in contact.

The first probably is *F. horridus*, corresponding closely to the description of that species as published in Vol. III of "The Cactaceae," but the area of distribution, as we found it, is separated from the type locality (San Francisquito Bay) by the Gulf of California. The plant is globular, becoming cylindrical with age, up to 2 meters in height, ribs 13, from 5 to 9 cm. high, areoles large, 5 to 8 cm. apart in young plants, but more appropriate in older specimens. The radial spines are really very coarse white bristles, 10 in number, central spines 7, the three upper ones stouter than the three lower, dark reddish brown, all spreading and straight except the central one which is porrect, much elongated, flattened and strongly hooked. Flowers are large, yellow, fruit yellow, oblong, flattened anteroposteriorly by pressure of the spine clusters, about 4 to 5 cm. long, seeds small, dark brown.

This species seems to be intermediate between *F. wislizenii* and *F. vizcainensis*. It differs from *F. wislizenii* in its fewer and higher ribs, its coarser radial bristles, its longer and stouter hooked central spine and in the color of its flowers which lack the red shading on the outer perianth segments ordinarily found in *F. wislizenii*. The number of ribs, 13, is apparently a fixed characteristic as out of several hundred specimens examined only the very small plants showed any variation from this number. *F. wislizenii* has from 20 to 40 ribs, depending on the size of the plant. Specimens of *F. vizcainensis* in my garden also all have 13 ribs, but Howard E. Gates in his description of this species (Cactus and Succulent Journal, February, 1933), states the ribs are from 13 to 21 and the accompanying illustration depicts a plant with 20 or more ribs. The spines of the species I describe are perhaps one third shorter than those of *F. vizcainensis* and of a browner color and the radial bristles are somewhat coarser.

It was first encountered between Torres and Ortiz, along the line of the railroad from Hermosillo to Guaymas and was fairly plentiful to below Navajoa, but seems to be limited to the elevated ridges east of the coastal plain. With the exception of small plants found on the first range of low hills south east of Empalme very

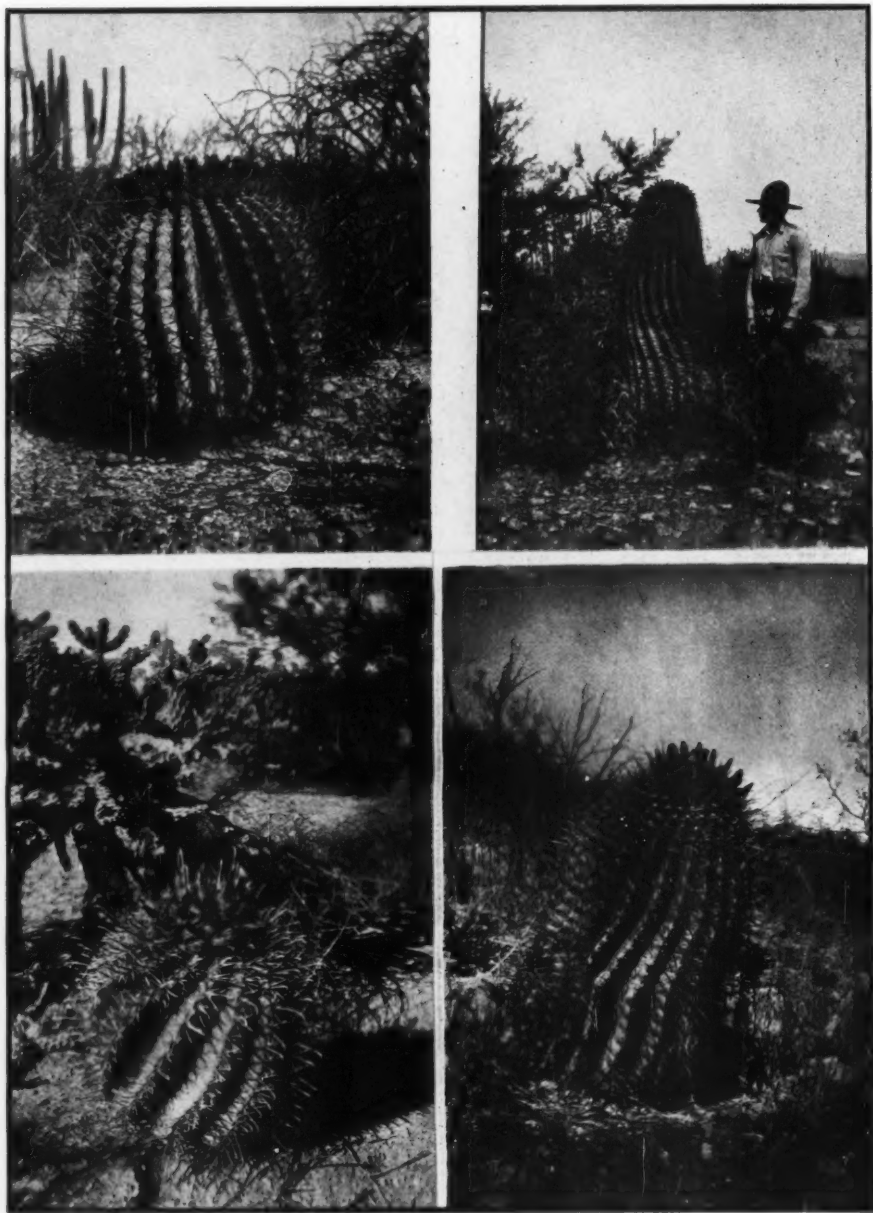
few plants were seen within ten miles of the Gulf. The best development in size was found between Navajoa and Alamos. I would greatly appreciate any information which will lead to the correct identification of this species.

The second species is, I think, undoubtedly the plant which Britton and Rose named *Ferocactus covillei*, but is quite different in many points from the plant from southern Arizona to which that name is usually applied. Its spines are shorter, more slender, less spreading, translucent yellow in color and absolutely straight except the elongated central which is sometimes slightly curved at the tip. The ribs are deeper and much less tuberculate (not even undulate in large plants) and areoles more approximate. The great majority of plants of this species were found at less than 50 feet elevation and none were seen above 150 feet. Plants were collected on the low coastal plain near Empalme, Sonora, the identical locality where collected by Rose, Standley and Russell, March 11, 1910, and throughout the coastal plain both north and south of Guaymas, but none were found east of the first mountain range paralleling the coast. But one or two flowers were seen and owing to the lateness of the season these may not have been typical. They were a light clear yellow. Fruit was yellow, slightly scaled, oblong and about 5 cm. long, seed, dark brown or black. "The Cactaceae," referring to *Ferocactus covillei* says:

"This species needs further study, the color of the flower is not definitely known and there is considerable variation in the markings of the seeds. The species as here considered has a wide range altitudinally and may include more than one species. We have reluctantly referred here two specimens (Nos. 4154 and 4155), collected by J. C. Blumer from the Comobabi Mountains, Arizona."

Specimens from Arizona and northern Sonora differ from the Guaymas specimens in their markedly tuberculate ribs, in their longer and heavier, widely spreading curved red spines and in the strongly hooked central spine, and in the altitude in which it grows. *F. covillei*, as found near Guaymas, is a plant of very close to sea level while the Arizona type is found in higher altitudes, up to several thousand feet. From about 150 to 1200 feet neither type was found, although a few plants resembling the Guaymas





UPPER LEFT: *Ferocactus covillei* Empalme, Sonora.

UPPER RIGHT: A large *Ferocactus covillei* 12 miles north of Guaymas.

LOWER LEFT: *Ferocactus borridus*, Ortiz, Sonora.

LOWER RIGHT: *Ferocactus wislizenii* between Nogales and Tucson, Arizona.

type, but with somewhat different spines were seen north of Hermosillo at about 800 feet elevation. These had 8 radial spines and four centrals, reddish brown and all straight except the lower central which was strongly hooked. No large plants were seen and no flowers and the unripe fruit was similar in shape, but smaller than the fruit of *F. covillei*.

It appears that there are at least three species included in this one name and that the southern Sonora plant is the one entitled to the name *F. covillei*. It is probable that the Arizona plant is the species referred by Engelmann to *Echinocactus emoryi* and that the species with four central spines should be given a separate name. I am hoping for an opportunity for further study of this last plant.

#### ANSWERS TO QUESTIONS

In the May, 1936, issue of the JOURNAL there is a request for a cure for White Scale by some person in Mass.

This scale is quite prevalent in the coastal country of Texas. The remedy is to take a soft pointed stick and carefully scrape each scale from the plant, being sure to get the small black center, which is underneath the white scale, on the stick. Dip the point of the stick in water after the removal of each individual scale. This serves to remove both the shell and the insect from the point of the stick. Be sure that all scales are removed from the plant. If the infected plant is matured, spray the same with Flit—if the plant is a seedling, spray with Evergreen, to which a few drops of Black 40 has been added. This scale spreads badly and should be eliminated as soon as discovered. It will spread to roses and shrubs. If not removed from a cactus the scale will eventually cause the cactus to dry up and die.

2.—Creosoted flats or plant stakes have a very bad effect on seedlings. The effect is to scald and burn up the plant.

3.—Oak ashes are detrimental to cactus growth. There is a large amount of acidity in oak and all cacti I have had any experience with are alkali plants.

The brown patch which begins at the base of Euphorbias and works upward is usually caused by a lack of moisture.

The only way to save a cactus that has been frost nipped or frozen is to cut the same off below the freeze (or nip) with a clean sharp knife. Sprinkle a little charcoal dust or lime over the cut and remove

plant from the exposed position. As a rule, this will not only save the plant but cause the same to put out several new shoots below the scar.

J. S. BOYLES, Texas.

#### PRESIDENT'S MESSAGE

Our Eighth Annual Show is now a matter of history. Those who were fortunate enough to attend, have pleasant memories of a wonderful array of magnificent plants and brilliant blossoms. Undoubtedly this Show contained the finest assortment of cactus and succulent plants ever assembled in an American show. Hearty congratulations are due to the prize winners as an exhibit had to be worthy to win in the face of such keen competition.

Our thanks and words of appreciation are extended to Messrs. Swisher, Clum, Poindexter and their able assistants for many days of hard work.

Sunday, July 26th is Cactus & Succulent Day at California's beautiful exposition in San Diego. Many changes and improvements have been made in the Expositions cactus and succulent gardens.

HOWARD E. GATES.

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#### INDEX TO VOL. VII

Thanks are due our Ex-President, E. M. Baxter, for this 5th Index of the Cactus Journal which he has completed. A glance over the many references will show the amount of work necessary to compile a list of this kind. This is the first year that the Index has been mailed with the 12th issue of the year. Review the Index and re-read many of the references that may have escaped your notice. We are grateful to our many loyal contributors whose names appear throughout the list.

EDITOR.

#### CACTUS SHOW

Manchester Playground, 88th and Hoover, Los Angeles. June 27—1 p. m. to 10 p. m., June 28—10 a. m. to 10 p. m. Sponsored by L. A. Playground Department. Visit the show and see how member Don Skinner puts on a show that draws an attendance of 8000.

#### BINDING CACTUS JOURNALS, Vol. VII

Remove the Britton and Rose center sections and mail (Parcels Post—not first class) or Express, your JOURNALS to Cactus Society, 6162 N. Figueroa St., Los Angeles, Calif. Back volumes of the JOURNAL may be sent in for binding at the same time. Enclose \$1.50 for each volume and 35c for each missing copy (we cannot guarantee to furnish all missing copies, but will do so if available). If you have not had your Volume I of Britton and Rose bound, you may do so by sending \$2 additional. Send to the above address only so that they are received not later than July 31st. No orders will be accepted after that date.

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